UNGAR
EXHIBIT A

Lyle Ungar Curriculum Vitae

Updated January, 2025

Computer and Information Science Department
University of Pennsylvania
Philadelphia, PA 19104
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Education

1979-84	*Massachusetts Institute of Technology*	
	PhD in Chemical Engineering	
1975-79	*Stanford University*	
	BS in Chemical Engineering (with distinction)	

Experience

2013-24   *University of Pennsylvania* (**bold**=home department; others are secondary)
Professor of
> **Computer and Information Science**
> Bioengineering
> Genomics and Computational Biology, School of Medicine
> Operations, Information and Decisions, Wharton
> Psychology, School of Arts and Sciences

1990-2013   *University of Pennsylvania*
Associate Professor of
> **Computer and Information Science**
> Bioengineering, 2010-13
> Chemical and Biomolecular Engineering, 1990-2005
> Electrical and Systems Engineering, 1996-99
> Genomics and Computational Biology (SOM), 2002-13
> Operations and Info. Management (Wharton), 2000-13
> Psychology (School of Arts and Sciences), 2012-13

1984-90   *University of Pennsylvania*
Assistant Professor of
> **Chemical Engineering** (1984-1987)

Computer and Information Science (1987-90)

2007   *Google*, New York Office (on leave)

1982   *Boston Consulting Group* (summer)
               Associate: strategic business analysis

Awards

- National Science Foundation (NSF) Graduate Fellow (1979-83)
- Presidential Young Investigator (1984-89)
- AAAS Leshner Fellow (2020-21)

Research interests

- *Psychology:* personality, well-being, health psychology, friendship, group decision making
- *Machine learning:* deep learning, LLMs, causal and interpretable models
- *NLP and text mining:* chatbots, analysis of user-generated content, conversation analysis
- *Computer Science/Economics:* forecasting, bibliometrics, applied economics
- *Computational Biology:* genomics, proteomics, brain image analysis

Administration at Penn (since 2000)

- Graduate Chair, *Computer and Information Science (CIS)* (2015-8)
- Associate Director, *Penn Center for Bioinformatics (PCBI)* (2004-13)
- Executive Committee, *Genomics and Computational Biology (GCB)* (2002-8)
- Admissions Committee, *Genomics and Computational Biology (GCB)* (2002-4)
- Director, *Executive Masters in Technology Management (EMTM)*, SEAS and Wharton (1996-2004)
- Director, *CIS Graduate Admissions* (2000-2)

Public Service

Conferences Chaired

- IEEE International Conference on Bioinformatics and Biomedicine (BIBM), (co-chair) 2012
- ACM International Conference on Knowledge Discovery and Data Mining (SIG-KDD), 2006
- Gordon Research Conference on Statistics in Chemistry and Chemical Engineering, 1997

Courses taught

Undergraduate

CIS 140/COGS 1	**Cognitive Science**
ChE 231	Thermodynamics

ChE 350	Fluid Mechanics
CSE 120	Programming Languages and Techniques
CSE/ChE 270	Expert Systems
CSE 391	Artificial Intelligence
EAS 410	Model Building with Modern Statistics

Graduate

CIS 5200	**Machine Learning**
CIS 521	Artificial Intelligence
CIS 5220	**Deep Learning**
CIS/GCB 535	Introduction to Bioinformatics
CIS 545	Big Data Analytics
CIS 620	Machine Learning (Advanced)
CIS 6220	**Advanced Topics in Deep Learning**
CIS 700	Machine Learning in Bioinformatics
CIS 700	Explainable AI
CIS 7000	Concepts in Deep Learning
CIS 7000	**Conversations and Conversational Bots**
ChE 500	Applied Mathematics I
ChE 501	Applied Mathematics II
ChE 640	Fluid Dynamics
ChE 641	Heat and Mass Transfer
ChE 700	Bifurcation Theory
EMTM 554	Data Mining
EMTM 605	Advances in Artificial Intelligence
MGMT 560	Management of Technology
MGMT 732	Technology for Managers

Masters Students

2022	**Ryan Guan**	*Empathic Conversation Models for Distressful Events*
2022	**Zachary Duey**	*Revisiting Shapley values: a casual perspective*
2021	**Yiling Geng**	*Interpretation and Lexicon Creation for Predictive NLP Models*
2017	**Agrima Seth**	*Depression Analysis Using Facebook and Twitter Posts*
2009	**Paramveer Dhillon**	*Transfer Learning using Feature Selection*
2003	**Alex Vasserman**	*Identifying Chemical Names in Biomedical*

| | | *Text: An Investigation of the Substring Co-occurrence Based Approaches* |
| 1988 | **Michael R. Weinstein** | *Process scheduling using artificial intelligence* |

Doctoral Students

Current	**Jeffrey Cho** (CIS)	*TBD (with Sharath Guntuku)*
Current	**Neal Sehgal** (CIS)	*TBD (with Sharath Guntuku)*
Current	**Shreya Havaldar** (CIS)	*TBD (with Eric Wong)*
2024	**Tony Liu** (CIS) Mount Holyoke College	*Improving Observational Causality Using Machine Learning (with Konrad Kording)*
2023 *Community*	**Sal Giorgi** (CIS) NIH	*Multi-Level Methods for Estimating Language from Social Media with User and Community Sociodemographics*
2019	**Joao Sedoc** (CIS) New York University	*Building and Evaluating Conversational Agents*
2016	**Ville Satopää** (Stat) INSEAD	*Partial Information Framework: Basic Theory and Applications*
2014	**Paramveer Dhillon** (CIS) University of Michigan	*Advances in Spectral Learning with Applications to Text Analysis and Brain Imaging*
2010	**Perry Evans** (GCB) Children's Hospital of Pennsylvania	*Modeling virus-host networks*
2010	**Ted Sandler** (CIS) Amazon	*Regularization and Model Selection with Networks of Features*
2009	**Bill Kandylas** (CIS) Microsoft	*Online clustering and citation analysis using Streemer*
2008	**Gary Morris** (CIS) Retired	*Active relational learning for kinship analysis*
2006	**Jing Zhou** (ESE) Microsoft	*Streaming Feature Selection*
2005	**Andrew Schein** (CIS) Amaranth LLC	*Active learning using A-optimality*
2004	**Sasha Popescul** (CIS) Google	*Statistical Learning from Relational Databases*
2004	**Panos Markopoulos** (CIS) University of Cyprus	*The Information Gap: Understanding Product Information Dissemination*
2003	**Eugene Buehler** (CIS) NIH	*Statistical Models for the analysis of heterogeneous biological data sets*
2002	**Roy Kwon** (ESE) University of Toronto	*Approximate Mechanisms and Algorithms for Combinatorial Auctions (with G. Anandalingam)*

2000	**David Parkes** (CIS)	*Iterative Combinatorial Auctions:*
	Harvard University	*Achieving Economic and Computational Efficiency*
1999	**Rinaldo Jose** (ChE)	*On the optimal coordination of profit*
	Private practice	*maximizing divisions using auctions and price theory*
1995	**Evi Gazi** (ChE)	*Verification of controllers for incompletely-*
	Chem. Ind. Inst.	*known chemical plants (with W.D. Seider)*
	Toxicology	
1995	**Jack Vinson** (ChE)	*Automated first principles reasoning using*
	Pharmacia	*qualitative and quantitative models*
1993	**Bill Foster** (ChE)	*The significance of neuronal ionic conductances*
	Retired	*in the cardiorespiratory nucleus of the solitary*
		tract of the rat and in Hodgkin-Huxley models
1993	**Catherine Catino** (ChE)	*Automated modeling of chemical plants with*
	Air Products	*application to hazard and operability studies*
1993	**Dimitris Psichogios** (ChE)	*Process control using structured neural*
	JP Morgan	*networks*
1990	**Stephen Grantham** (ChE)	*Automated reasoning from first principles*
	Merck	*using qualitative physics*
1989	**Charles X. Ling** (CIS)	*Inductive learning and invention in domains*
	U. Western Ontario	*with primitive recursive structures*
1989	**Paul P. Durand** (ChE)	*Percolation and transport in random media*
	Exxon-Mobil	*with application to high temperature*
		superconductors
1989	**Thomas J. Balsano** (ChE)	*Unidirectional solidification of an anisotropic*
	Amoco	*binary alloy*
1989	**Ralph Gonzales** (ESE)	*Learning by progressive subdivision of state*
	U. Rutgers, Camden	*space*
1988	**Steven J. Weinstein** (ChE)	*The low flow rate limit for immiscible fluid*
	Kodak	*systems in narrow gaps*
1988	**Francis X. Kelly** (ChE)	*Growth morphologies in rapid solidification*
	Exxon-Mobil	

Postdoctoral Fellows

2021-24	**Sunny Rai** (joint with Sharath Guntuku)
2020-22	**Rupa Jose**
	RAND
2020-22	**Tingting Liu** (joint with Brenda Curtis at NIH)
	NIH
2019-20	**Rahul Ladhania**
	University of Michigan

2017-18	**Sharath Chandra Guntuku**
	University of Pennsylvania
2016-18	**Kokil Jaidka**
	National University of Singapore
2015-18	**Anneke Buffone** (joint with Martin Seligman)
	Facebook
2014-18	**Daniel Preotiuc-Pietro**
	Bloomberg
2014-16	**Jordan Carpenter** (joint with Martin Seligman)
	Duke University
2014-15	**Jens Witkowski**
	University of Frankfurt
2012-14	**H. Andrew Schwarz**
	Stony Brook University

Publications

466. Classifying 'unstructured Text in Electronic Health Records for Mental Health Prediction Models: Large Language Model Evaluation Study. NC Cardamone, M Olfson, T Schmutte, L Ungar, T Liu, SW Cullen, NJ Williams, SC Marcus *JMIR Medical Informatics* 13 (1), e65454, 2025

465. Historical patterns of rice farming explain modern-day language use in China and Japan more than modernization and urbanization. SC Guntuku, T Talhelm, G Sherman, A Fan, S Giorgi, L Wei, LH Ungar *Humanities and Social Sciences Communications* 11 (1), 1-21, 2024

464. Large language models display human-like social desirability biases in Big Five personality surveys. A Salecha, ME Ireland, S Subrahmanya, J Sedoc, LH Ungar, JC Eichstaedt *PNAS nexus* 3 (12), page 533, 2024

463. Disparities by Race and Urbanicity in Online Health Care Facility Reviews. NKR Sehgal, AK Agarwal, L Southwick, AP Pelullo, L Ungar, ...*JAMA Network Open* 7 (11), e2446890-e2446890, 2024

462. Modeling Human Subjectivity in LLMs Using Explicit and Implicit Human Factors in Personas S Giorgi, T Liu, A Aich, K Isman, G Sherman, Z Fried, J Sedoc, L Ungar, B Curtis *Findings of the Association for Computational Linguistics: EMNLP 2024*, 7174-7188, 2024

461. Exploring a Language-Based Interest Assessment: Predicting Vocational Interests on Social Media Using Natural Language Processing. YYL Du, D Jain, YM Cho, DX Hou, SC Guntuku, L Ungar, L Tay *Journal of Career Assessment*, 10690727241289125, 2024

460. People judge others more harshly after talking to bots. KS Tey, A Mazar, G Tomaino, AL Duckworth, LH Ungar *PNAS nexus* 3 (9), page 397, 2024

459. Reply to Wang: Clarifying model performance and language markers of depression across races. S Rai, EC Stade, S Giorgi, A Francisco, AV Ganesan, LH Ungar, B Curtis, SC Guntuku *Proceedings of the National Academy of Sciences* 121 (31), e2410449121, 2024

458. Reply to De Freitas: Social media language explains less of the variance in depression of Black individuals than of White individuals. S Rai, EC Stade, S Giorgi, A Francisco, LH Ungar, B Curtis, SC Guntuku *Proceedings of the National Academy of Sciences* 121 (29), e2411458121, 2024

457. Mining for health: A comparison of word embedding methods for analysis of ehrs data. E Getzen, Y Ruan, L Ungar, Q Long *Statistics in Precision Health: Theory, Methods and Applications*, 313-338, 2024

456. Quantifying generalized trust in individuals and counties using language. S Giorgi JJ Jones A Buffone JC Eichstaedt P Crutchley DB Yaden J Elstein M Zamani J Kregor L Smith MEP Seligman ML Kern L Ungar HA Schwartz *Frontiers in Social Psychology* 2024

455. Measuring Causal Effects of Civil Communication without Randomization. T Liu, L Ungar, K Kording, M McGuire. *Proceedings of the AAAI Conference on Web and Social Media* 2024

454. Training and validation of a pandemic clinical decision support model for ventilators using collective intelligence and imitation learning. GE Weissman NS Bishop L Ungar MP Kerlin. *American Thoracic Society 2024*

453. Tapping into alcohol use during COVID: Drinking correlates among bartenders and servers, R Jose W Wang G Sherman RN Rosenthal HA Schwartz L Ungar JR McKay. *PLOS One* 2024

452. Key Language Markers of Depression on Social Media Depend on Race. S Rai, EC Stade, S Giorgi, A Francisco, LH Ungar, B Curtis, SC Guntuku. *Proceedings of the National Academy of Sciences 121 (14)*, e231983712, 2024

451. Large language models could change the future of behavioral healthcare: a proposal for responsible development and evaluation. EC Stade, SW Stirman, LH Ungar, CL Boland, HA Schwartz, DB Yaden, J Sedoc, RJ DeRubeis, RWiller, JC Eichstaedt. *NPJ Mental Health Research* 3 (1), 12, 2024

450. A cross-cultural examination of temporal orientation through everyday language on social media. XD Hou, SC Guntuku, YM Cho, G Sherman, T Zhang, M Li, L Ungar, L Tay. *PloS One 19 (3)*, e0292963, 2024

449. Language-based EMA assessments help understand problematic alcohol consumption. AH Nilsson, HA Schwartz, RN Rosenthal, JR McKay, H Vu, YM Cho, S Mahwish, AV Ganesan, L Ungar, *PloS One 19 (3)*, e0298300, 2024

448. Using Daily Language to Understand Drinking: Multi-Level Longitudinal Differential Language Analysis M Matero, H Vu, A Nilsson, S Mahwish, YM Cho, J McKay, J Eichstaedt, R Rosenthal, L Ungar, HA Schwartz, *Proceedings of the 9th Workshop on Computational Linguistics and Clinical Psychology,* 133-144, 2024

447. Differential temporal utility of passively sensed smartphone features for depression and

anxiety symptom prediction: a longitudinal cohort study. CA Stamatis, J Meyerhoff, Y Meng, ZCC Lin, YM Cho, T Liu, CJ Karr, T Liu, BL Curtis, LH Ungar, DC Mohr. *NPJ Mental Health Research* 3 (1), 1, 2024

446. Building a Multimodal Classifier of Email Behavior: Towards a Social Network Understanding of Organizational Communication. H Shah, K Jaidka, L Ungar, J Fagan, T Grosser. *Information* 14 (12), 661, 2023

445. Conditioning on Dialog Acts improves Empathy Style Transfer. R Qu, L Ungar, J Sedoc. *Findings of the Association for Computational Linguistics: EMNLP 2023*, 13254-13271, 2023

444. Smartphone sensor data estimate alcohol craving in a cohort of patients with alcohol-associated liver disease and alcohol use disorder T Wu, G Sherman, S Giorgi, P Thanneeru, LH Ungar, PS Kamath, DA Simonetto, BL Curtis, VH Shah. *Hepatology Communications* 7 (12), e0329, 2023

443. AWARE-TEXT: An Android Package for Mobile Phone Based Text Collection and On-Device Processing. S Giorgi, G Sherman, D Bellew, SC Guntuku, L Ungar, B Curtis. *Proceedings of the 3rd Workshop for Natural Language Processing Open Source Software,* 102-109, 2023

442. Specific associations of passively sensed smartphone data with future symptoms of avoidance, fear, and physiological distress in social anxiety. CA Stamatis, T Liu, J Meyerhoff, Y Meng, YM Cho, CJ Karr, BL Curtis, LH Ungar, DC Mohr, *Internet Interventions,* 34, 100683 2023

441. The online language of work-personal conflict. G Liou, J Mittal, NKR Sehgal, L Tay, L Ungar, SC Guntuku. *Scientific Reports, 13 (1)*, 21019, 2023

440. Predicting the Effect of Proton Beam Therapy Technology on Pulmonary Toxicities for Patients With Locally Advanced Lung Cancer Enrolled in the Proton Collaborative Group Prospective Clinical Trial. G Valdes, J Scholey, TF Nano, ED Gennatas, P Mohindra, N Mohammed, J Zeng, R Kotecha, LR Rosen, J Chang, HK Tsai, JJ Urbanic, CE Vargas, YY Nathan, LH Ungar, E Eaton, CB Simone. *International Journal of Radiation Oncology, Biology, Physics* 2023

439. Prospective Learning: Principled Extrapolation to the Future. A De Silva, R Ramesh, L Ungar, … and, JT Vogelstein. *Conference on Lifelong Learning Agents*, 347-357, 2023

438. A transdiagnostic, dimensional classification of anxiety shows improved parsimony and predictive noninferiority to DSM. EC Stade, RJ DeRubeis, L Ungar, AM Ruscio *Journal of Psychopathology and Clinical Science 132 (8)*, 937 2023

437. Comparison of wellbeing structures based on survey responses and social media language: A network analysis S Sametoğlu, DHM Pelt, JC Eichstaedt, LH Ungar, M Bartels *Applied Psychology: Health and Well-Being 15 (4)*, 1555-1582 2023

436. Visual Topics via Visual Vocabularies. S Havaldar, W You, L Ungar, E Wong *XAI in Action: Past, Present, and Future Applications.* NeurIPS XAIA 2023

435. Using artificial intelligence to assess personal qualities in college admissions.
B Lira, M Gardner, A Quirk, C Stone, A Rao, L Ungar, S Hutt, L Hickman, SK D'Mello,
A Duckworth. *Science Advances 9 (41*), eadg9405 2023

434. AI-based analysis of social media language predicts addiction treatment dropout
at 90 days. B Curtis, S Giorgi, L Ungar, H Vu, D Yaden, T Liu, K Yadeta, HA Schwartz
Neuropsychopharmacology 48 (11), 1579-1585 2023

433. A deep learning approach to personality assessment: Generalizing across items and
expanding the reach of survey-based research. S Abdurahman, H Vu, W Zou, L Ungar,
S Bhatia, S Abdurahman, H Vu, W Zou, L Ungar, S Bhatia *Journal of Personality and
Social Psychology* 2023

432. Fair Skill Brier Score: Evaluating Probabilistic Forecasts of One-Off Events with Different
Numbers of Categorical Outcomes J Wang, B Mellers, L Ungar, V Satopää
*INSEAD Working Pape*r 2023

431. Effect of integrating patient-generated digital data into mental health therapy: a randomized
controlled trial. RM Merchant, L Southwick, RS Beidas, DS Mandell, SC Guntuku, A Pelullo,
L Yang, N Mitra, B Curtis, L Ungar, DA Asch. *Psychiatric Services 74 (8*), 876-879 2023

430. Depression and anxiety have distinct and overlapping language patterns: Results from a
clinical interview. EC Stade, L Ungar, JC Eichstaedt, G Sherman, AM Ruscio. *Journal of
Psychopathology and Clinical Science* 2023

429. Automated Detection of Interpretable Causal Inference Opportunities: Regression
Discontinuity Subgroup Discovery. T Liu, P Lawlor, L Ungar, K Kording, R Ladhania
ICML 3rd Workshop on Interpretable Machine Learning in Healthcare (IMLH) 2023

428. Automated Detection of Causal Inference Opportunities: Regression Discontinuity Subgroup
Subgroup Discovery T Liu, P Lawlor, L Ungar, K Kording, R Ladhania. *Transactions on Machine
Learning Research* 2023

427. The value of social media language for the assessment of wellbeing: a systematic review
and meta-analysis. S Sametoğlu, DHM Pelt, JC Eichstaedt, LH Ungar, M Bartels
The Journal of Positive Psychology, 1-19 2023

426. Predicting US county opioid poisoning mortality from multi-modal social media and
psychological self-report data. S Giorgi, DB Yaden, JC Eichstaedt, LH Ungar, HA Schwartz,
A Kwarteng, Brenda Curtis, *Scientific reports 13 (1)*S, 9027 2023

425. Different affordances on facebook and sms text messaging do not impede
generalization of language-based predictive models. T Liu, S Giorgi, X Tao,
SC Guntuku, D Bellew, B Curtis, L Ungar. *Proceedings of the International AAAI
Conference on Web and Social Media Volume* 17   2023

424. Analyzing text message linguistic features: Do people with depression communicate
differently with their close and non-close contacts? J Meyerhoff, T Liu, CA Stamatis,
T Liu, H Wang, Y Meng, B Curtis, CJ Karr, G Sherman, LH Ungar, DC Mohr,

Behaviour Research and Therapy, 104342   2023

423. Characterizing empathy and compassion using computational linguistic analysis.
DB Yaden, S Giorgi, M Jordan, A Buffone, JC Eichstaedt, HA Schwartz, LUngar, PBloom
Emotion 2023

422. PD-0173 Proton center variations in predicting pulmonary toxicities from proton
radiotherapy of lung cancer. T Nano, G Valdes, J Scholey, A Comas-Leon, E Gennatas,
W Hartsell, J Zeng, M Chuoung, M Mishra, L Rosen, J Chang, H Tsai, J Urbanic, C Vargas,
L Ungar, E Eaton, C Simone. *Radiotherapy and Oncology* 182, S134   2023

421. Sa1514 Digital Phenotyping for Craving Prediction in a Cohort with Alcohol-Associated Liver
Disease: A Pilot Study. T Wu, G Sherman, S Giorgi, P Thanneeru, LH Ungar, PS Kamath, D
Simonetto, BL Curtis, V Shah. *Gastroenterology* 164 (6), S-1279 2023

420. OC-019 Leveraging Natural Language Processing and Artificial Intelligence to Label
Unstructured Data for Risk Prediction. C Amro, A Desai, P Dattatri, T Liu, JY Hsu, RB Broach,
LH Ungar, JP Fischer. *British Journal of Surgery* 110 (Supplement_2), znad080. 026 2023

419. Beyond beliefs: Multidimensional aspects of religion and spirituality in language.
DB Yaden, S Giorgi, ML Kern, A Adler, LH Ungar, MEP Seligman, JC Eichstaedt
Psychology of Religion and Spirituality 15 (2), 272 2023

418. Detecting symptoms of depression on reddit. T Liu, D Jain, SR Rapole, B Curtis, JC Eichstaedt,
LH Ungar, SC Guntuku. *Proceedings of the 15th ACM Web Science Conference 2023,* 174-183
2023

417. Insights into the accuracy of social scientists' forecasts of societal change. I Grossmann
Nature human behavior 7 (4), 484-501 2023

416. Author Correction: Opioid death projections with AI-based forecasts using social media
language. M Matero, S Giorgi, B Curtis, LH Ungar, HA Schwartz *NPJ Digital Medicine 6 (1)*, 45
2023

415. Reddit language indicates changes associated with diet, physical activity, substance use,
and smoking during COVID-19. K Wanchoo, M Abrams, RM Merchant, L Ungar, SC Guntuku
PloS one 18 (2), e0280337   2023

414. The trouble with talent: Semantic ambiguity in the workplace. DA Southwick, ZV Liu,
C Baldwin, AL Quirk, LH Ungar, CJ Tsay, A Duckworth. *Organizational Behavior and Human
Decision Processes 174*, 104223 2023

413. Current Research in Ecological and Social Psychology. S Giorgi, JC Eichstaedt,
D Preotiuc-Pietro, JR Gardner, HA Schwartz, LH Ungar. *Current Research in Ecological and
Social Psychology 5,* 100159 2023

412. Filling in the white space: Spatial interpolation with Gaussian processes and social
media data. S Giorgi, JC Eichstaedt, D Preoţiuc-Pietro, JR Gardner, HA Schwartz, LH Ungar
Current research in ecological and social psychology 5, 100159 2023

411. "That's Interesting!": Using Facebook Language to Predict Vocational Interests. YYL Du, D
Jain,

SC Guntuku, X Hou, L Ungar, L Tay. *Academy of Management Proceedings 2023 (1)*, 10905 2023

410. Perseverative Thinking is Associated with Features of Spoken Language, EC Stade, L Ungar, S Havaldar, AM Ruscio, *Behaviour Research and Therapy*, 104307, 2023

409. Opioid Death Projections with AI-Based Forecasts Using Social Media Language, M Matero, S Giorgi, B Curtis, LH Ungar, HA Schwartz, *NPJ Digital Medicine 6 (1)*, 2023

408. Reddit Language Indicates Changes Associated with Diet, Physical Activity, Substance Use, and Smoking During COVID-19, K Wanchoo, M Abrams, RM Merchant, L Ungar, SC Guntuku, *Plos One 18 (2)*, e0280337 2023

407. Chess Lessons: Harnessing Collective Human Intelligence and Imitation Learning to Support Clinical Decisions, GE Weissman, LH Ungar, SD Halpern *Annals of Internal Medicine 176 (2)*, 274-275 2023

406. Mining for Equitable Health: Assessing the Impact of Missing Data in Electronic Health Records, E Getzen, L Ungar, D Mowery, X Jiang, Q Long, *Journal of Biomedical Informatics*, 104269 2023

405. Detecting Symptoms of Depression on Reddit, T Liu, D Jain, SR Rapole, B Curtis, JC Eichstaedt, LH Ungar, S Chandra *WebSci '23,* 2023

404. A Daily Diary Study Into the Effects on Mental Health of COVID-19 Pandemic-Related Behaviors, P Shaw, S Blizzard, G Shastri, P Kundzicz, B Curtis, L Ungar, L Koehly, *Psychological Medicine 53 (2)*, 524-532 2023

403. Effect of Integrating Patient-Generated Digital Data Into Mental Health Therapy: A Randomized Controlled Trial, RM Merchant, L Southwick, RS Beidas, DS Mandell, SC Guntuku, A Pelullo, L Yang, N Mitra, B Curtis, L Ungar, DA Asch, *Psychiatric Services*, appi. ps. 20220272 2022

402. Inducing Generalizable and Interpretable Lexica, Y Geng, Z Wu, R Santhosh, T Srivastava, L Ungar, J Sedoc *Findings of the Association for Computational Linguistics: EMNLP 2022*, 4430-4448 2022

401. Interactively Uncovering Latent Arguments in Social Media Platforms: A Case Study on the Covid-19 Vaccine Debate, ML Pacheco, T Islam, L Ungar, M Yin, D Goldwasser, *Proceedings of the Fourth Workshop on Data Science with Human-in-the-Loop (Language Advances)*, 94-111 2022

400. Prospective Associations of Text-Message-Based Sentiment With Symptoms of Depression, Generalized Anxiety, and Social Anxiety, CA Stamatis, J Meyerhoff, T Liu, G Sherman, H Wang, T Liu, B Curtis, LH Ungar, DC Mohr, *Depression and anxiety 39 (12)*, 794-804 2022

399. Life Under Stay-at-Home Orders: A Panel Study of Change in Social Interaction and Emotional Wellbeing Among Older Americans During COVID-19 Pandemic, J Lin, M Zajdel, KR Keller, FO Gilpin Macfoy, P Shaw, B Curtis, L Ungar, L Koehly, *BMC Public Health 22 (1)*, 1-13, 2022

398. Dynamics of Sadness by Race, Ethnicity, and Income Following George Floyd's Death, J Lin, P Shaw, B Curtis, L Ungar, L Koehly, *Ssm. Mental Health 2*, 100134 2022

397. Change in Social Interaction and Mental Health Among Older Americans During COVID-19 Pandemic, K Keller, J Lin, M Zajdel, FG Macfoy, P Shaw, B Curtis, L Ungar, L Koehly, *Innovation in Aging 6 (Supplement_1)*, 491-492 2022

396. Head versus heart: social media reveals differential language of loneliness from depression, T Liu, LH Ungar, B Curtis, G Sherman, K Yadeta, L Tay, JC Eichstaedt, SC Guntuku, *NPJ Mental Health Research 1 (1*), 16 2022

395. Linguistic predictors from Facebook postings of substance use disorder treatment retention versus discontinuation, T Liu, S Giorgi, K Yadeta, HA Schwartz, LH Ungar, B Curtis, *The American Journal of Drug and Alcohol Abuse 48 (5)*, 573-585 2022

394. The development of grit and growth mindset in Chinese children, T Zhang, D Park, LH Ungar, E Tsukayama, L Luo, AL Duckworth, *Journal of Experimental Child Psychology 221*, 105450 2022

393. Evidence against risk as a motivating driver of COVID-19 preventive behaviors in the United States, MK Fullerton, N Rabb, S Mamidipaka, L Ungar, SA Sloman *Journal of Health Psychology   27 (9)*, 2129-2146 2022

392. Mobile Footprinting: Linking Individual Distinctiveness in Mobility Patterns to Mood, Sleep, and Brain Functional Connectivity, CH Xia, I Barnett, TM Tapera, A Adebimpe, JT Baker, DS Bassett, MA Brotman, ME Calkins, Z Cui, E Leibenluft, S Linguiti, DM Lydon-Staley, ML Martin, Moore TM, Murtha K, Piiwaa K, Pines A, Roalf DR, Rush-Goebel S, Wolf DH, Ungar LH, TD Satterthwaite, *Neuropsychopharmacology 47 (9)*, 1662-1671, 2022

391. Feasibility of Mobile Health and Social Media–Based Interventions for Young Adults With Early Psychosis and Clinical Risk for Psychosis: Survey Study OH Franco, ME Calkins, S Giorgi, LH Ungar, RE Gur, CG Kohler, SX Tang *JMIR Formative Research 6 (7)*, e30230, 2022

390. Nonsuicidal Self-Injury and Substance Use Disorders: A Shared Language of Addiction. S Giorgi, MK Himelein-Wachowiak, D Habib, L Ungar, B Curtis, *Proceedings of the Eighth Workshop on Computational Linguistics and Clinical Psychology, 177-183,* 2022

389. Data-driven exclusion criteria for instrumental variable studies T Liu, P Lawlor, L Ungar, K Kording, *Conference on Causal Learning and Reasoning,* 485-508, 2022

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